



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/718,713

11/24/2003

Toshio Yoshihara

DAIN : 362C

9965

6160

7590

04/12/2005

PARKHURST & WENDEL, L.L.P.  
1421 PRINCE STREET  
SUITE 210  
ALEXANDRIA, VA 22314-2805

EXAMINER

ZIMMERMAN, GLENN

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Ar

<b>Office Action Summary</b>	<b>Application No.</b> 10/718,713	<b>Applicant(s)</b> YOSHIHARA ET AL.	
	<b>Examiner</b> Glenn Zimmerman	<b>Art Unit</b> 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18-20 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-20 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

Amendment, filed on January 31, 2005, has been entered and acknowledged by the examiner.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Ushifusa et al. U.S. Patent 5,818,168.

Regarding claim 18, Ushifusa et al. disclose an alternating current type plasma display (**abstract**) comprising: a back substrate (**Fig. 1A-1C;19 ref. 4b**) and a front substrate (**ref. 4a**) provided to as to face each other with a gas discharge space (**ref. 3d**) sandwiched between the back and front substrates; a pair of electrodes (**ref. 5a, 5b or 6a, 6b**), covered with a dielectric layer (**ref. 7a**), provided on one or both of the substrates; and a protective layer (**ref. 8a**) provided on the dielectric layer, the

Art Unit: 2879

protective layer being produced by coating a coating liquid (**col. 24 line 34, 40**), substantially containing a partial hydrolyzate (**col. 24 lines 29-40**) prepared from a composition comprising an alkaline earth metal compound comprising a magnesium alkoxide (**di(n-butoxy)magnesium; col. 24 lines 34-36; col. 4 line 34**) and an additive comprising diethanolamine, on a dielectric layer provided on a substrate and heating the coating (**col. 24 lines 29-34**).

Claim 18 contains a product-by-process limitation and the particular process "prepared from a composition comprising an ... additive comprising diethanolamine" has not been given patentable weight.

Regarding claim 19, Ushifusa et al. disclose the alternating current type plasma display (**abstract**) according to claim 18, wherein the composition further comprises water in an amount not more than a stoichiometric amount relative to the hydrolysable reaction site of the magnesium alkoxide and an organic solvent (**ref . 8a**).

Claim 19 contains a product-by-process limitation and the particular process wherein the composition further comprises water in an amount not more than a stoichiometric amount relative to the hydrolysable reaction site of the magnesium alkoxide and an organic solvent has not been given patentable weight.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aboelfotoh U.S. Patent 4,429,303 in view of Van de Leest U.S. Patent 5,509,958.

Regarding claim 18, Aboelfotoh teaches an alternating current type plasma display (**abstract**) comprising: a back substrate (**Fig. 3 ref. 2**) and a front substrate (**Fig. 3 ref. 1**) provided to as to face each other with a gas discharge space (**ref. 20 area**) sandwiched between the back and front substrates; a pair of electrodes (**ref. 3A and 3B**), covered with a dielectric layer (**ref. 7**), provided on one or both of the substrates; and a protective layer (**ref. 8**) provided on the dielectric layer, but fails to teach the protective layer being produced by coating a coating liquid, substantially containing a partial hydrolyzate prepared from a composition comprising an alkaline earth metal compound comprising a magnesium alkoxide, on a dielectric layer provided on a substrate and heating the coating. Van de Leest in the analogous art teaches, the protective layer being produced by coating a coating liquid (claim 1), substantially containing a partial hydrolyzate (claim 1) prepared from a composition comprising an

Art Unit: 2879

alkaline earth metal compound comprising a magnesium alkoxide (claim 1), on a substrate and heating the coating (claim 7). Additionally, Van de Leest teaches incorporation of such a method of forming a protective layer to improve the process of providing a magnesium-oxide layer on glass at a temperature of maximally 250 C for plasma displays (col. 2 lines 8-13; col. 5 line 19).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the protective layer being produced by coating a coating liquid, substantially containing a partial hydrolyzate prepared from a composition comprising an alkaline earth metal compound comprising a magnesium alkoxide, on a dielectric layer provided on a substrate and heating the coating in the protective layer of Aboelfotoh, since such a modification would improve the process of providing a magnesium-oxide layer on glass at a temperature of maximally 250 C for plasma displays as taught by Van de Leest.

Claim 18 contains a product-by-process limitation and the particular process "prepared from a composition comprising an ... additive comprising diethanolamine" has not been given patentable weight.

Regarding claim 19, Van de Leesten discloses wherein the composition further comprises water (**col. 3 line 22**), and an organic solvent (**col. 3 line 21**). This claim is rejected for the same reasons found in claim 18.

Claim 19 contains a product-by-process limitation and the particular process wherein the composition further comprises water in an amount not more than a

Art Unit: 2879

stoichiometric amount relative to the hydrolysable reaction site of the magnesium alkoxide and an organic solvent has not been given patentable weight.

Regarding claim 20, Aboelfotoh teaches an alternating plasma display comprising: a back substrate and a front substrate provided so as to face each other with a gas discharge space sandwiched between the back and front substrates; a pair of electrodes, covered with a dielectric layer, provided on one or both of the substrates; and a protective layer provided on the dielectric layer, the protective layer comprising an alkaline earth metal oxide film, wherein, but fails to teach the protective layer formed by coating a coating liquid, substantially containing a partial hydrolyzate prepared from a composition comprising (1) an alkaline earth metal compound having a hydrolysable reaction site, (2) an additive which can function to dissolve or disperse the alkaline earth metal compound in an organic solvent and to permit the hydrolysis of the alkaline earth metal compound to proceed in a rate-controlling manner, and an organic solvent, on a dielectric layer provided on a substrate and heating the coating, wherein the alkaline earth metal compound is a magnesium alkoxide. Van de Leesten in the analogous art teaches the protective layer formed by coating a coating liquid, substantially containing a partial hydrolyzate prepared from a composition comprising (1) an alkaline earth metal compound having a hydrolysable reaction site (col. 3 line 19), (2) an additive which can function to dissolve (col. 3 line 20 glycol) or disperse the alkaline earth metal compound in an organic solvent (col. 3 line 21) and to permit the hydrolysis of the alkaline earth metal compound to proceed in a rate-controlling manner, and an organic solvent (col. 3 line 21), on a dielectric layer provided on a substrate and heating (col. 3 line 56; col. 4

Art Unit: 2879

line 20) the coating, wherein the alkaline earth metal compound is a magnesium alkoxide (**claim 1**). Additionally, Van de Leest teaches incorporation of such a method of forming a protective layer to improve the process of providing a magnesium-oxide layer on glass at a temperature of maximally 250 C for plasma displays (col. 2 lines 8-13; col. 5 line 19).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the protective layer being produced by coating a coating liquid, substantially containing a partial hydrolyzate derived from an alkaline earth metal compound having a hydrolysable reaction site, on a substrate and heating the coating, wherein the alkaline earth metal compound is a magnesium alkoxide in the protective layer of Aboelfotoh, since such a modification would improve the process of providing a magnesium-oxide layer on glass at a temperature of maximally 250 C for plasma displays as taught by Van de Leest.

Claim 20 is a product-by-process claim and the particular process wherein the additive of the liquid is diethanolamine has not been given patentable weight.

Regarding claim 23, Van de Leesten discloses wherein the alkaline earth metal oxide film is formed of magnesium oxide particles having a diameter of not more than 0.3  $\mu\text{m}$  (**col. 4 line 39; claim 4**). This claim is rejected for the same reasons found in claim 18.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the



Art Unit: 2879

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 18-20 and 23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,437,506. Although the conflicting claims are not identical, they are not patentably distinct from each other because Claims 23 of the instant applications sites which includes claim 18, an alternating current type plasma display comprising: a back substrate and a front substrate provided to face each other with a gas discharge space sandwiched between the back and front substrates; a pair of electrodes, covered with a dielectric layer, provided on one or both of the substrates; and a protective layer provided on the dielectric layer, the protective layer being produced by coating a coating liquid, substantially containing a partial hydrolyzate prepared from a composition comprising an alkaline earth metal compound comprising a magnesium alkoxide and an additive comprising a diethanolamine, on a dielectric layer provided on a substrate and heating the coating, wherein the alkaline earth metal oxide film is formed of magnesium oxide particles having a diameter of not more than 0.3 micrometers, claim 19 of the instant application discloses the alternating current type plasma display according to

Art Unit: 2879

claim 18, wherein the composition further comprises water in an amount not more than a stoichiometric amount relative to the hydrolysable reaction site of the magnesium alkoxide, and an organic solvent, and claim 20 of the instant application discloses an alternating current type plasma display comprising: a back substrate and a front substrate provided to face each other with a gas discharge space sandwiched between the back and front substrates; a pair of electrodes, covered with a dielectric layer, provided on one or both of the substrates; and a protective layer provided on the dielectric layer, the protective layer comprising an alkaline earth metal oxide film formed by coating a coating liquid, substantially containing a partial hydrolyzate prepared from a composition comprising an alkaline earth metal compound having a hydrolysable reaction site, an additive that can function to dissolve or disperse the alkaline earth metal compound in an organic solvent and to permit the hydrolysis of the alkaline earth metal compound to proceed in a rate-controlling manner, and an organic solvent, on a dielectric layer provided on a substrate and heating the coating, wherein the alkaline earth metal compound is a magnesium alkoxide and the additive is diethanolamine and claim 1 of the patent discloses an alternating current type plasma display comprising a back substrate and a front substrate disposed opposite to each other; a gas discharge space sandwiched between the front and back substrates; a pair of electrodes provided on at least one of the substrates and covered with a dielectric layer; and a protective layer provided on the dielectric layer the protective layer being constituted by a continuous film formed of fine particles of magnesium oxide having a diameter of 5 to 100 nm. The process in the claim 23 (which is actually in claim 18) above "the

Art Unit: 2879

protective layer being produced by coating a coating liquid, substantially containing a partial hydrolyzate prepared from a composition comprising an alkaline earth metal compound comprising a magnesium alkoxide and an additive comprising a diethanolamine, on a dielectric layer provided on a substrate and heating the coating" will not be given patentable weight. The process in claim 19 of "wherein the composition further comprises water in an amount not more than a stoichiometric amount relative to the hydrolysable reaction site of the magnesium alkoxide, and an organic solvent", has not been given patentable weight. The process in claim 20 of the instant application "formed by coating a coating liquid, substantially containing a partial hydrolyzate prepared from a composition comprising an alkaline earth metal compound having a hydrolysable reaction site, an additive that can function to dissolve or disperse the alkaline earth metal compound in an organic solvent and to permit the hydrolysis of the alkaline earth metal compound to proceed in a rate-controlling manner, and an organic solvent, on a dielectric layer provided on a substrate and heating the coating, wherein the alkaline earth metal compound is a magnesium alkoxide and the additive is diethanolamine" has not been given patentable weight.

Claims 18-20 and 23 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 21 of copending Application No. 10/164,415 which is U.S. Patent Application Publication 2003/0067269. Although the conflicting claims are not identical, they are not patentably distinct from each other because Claims 18 of the instant applications sites an alternating current type plasma display comprising: a back substrate and a front

Art Unit: 2879

substrate provided to face each other with a gas discharge space sandwiched between the back and front substrates; a pair of electrodes, covered with a dielectric layer, provided on one or both of the substrates; and a protective layer provided on the dielectric layer, the protective layer being produced by coating a coating liquid, substantially containing a partial hydrolyzate prepared from a composition comprising an alkaline earth metal compound comprising a magnesium alkoxide and an additive comprising a diethanolamine, on a dielectric layer provided on a substrate and heating the coating, claim 19 of the instant application discloses the alternating current type plasma display according to claim 18, wherein the composition further comprises water in an amount not more than a stoichiometric amount relative to the hydrolysable reaction site of the magnesium alkoxide, and an organic solvent, and claim 20 of the instant application discloses an alternating current type plasma display comprising: a back substrate and a front substrate provided to face each other with a gas discharge space sandwiched between the back and front substrates; a pair of electrodes, covered with a dielectric layer, provided on one or both of the substrates; and a protective layer provided on the dielectric layer, the protective layer comprising an alkaline earth metal oxide film formed by coating a coating liquid, substantially containing a partial hydrolyzate prepared from a composition comprising an alkaline earth metal compound having a hydrolysable reaction site, an additive that can function to dissolve or disperse the alkaline earth metal compound in an organic solvent and to permit the hydrolysis of the alkaline earth metal compound to proceed in a rate-controlling manner, and an organic solvent, on a dielectric layer provided on a substrate and heating the coating,

Art Unit: 2879

wherein the alkaline earth metal compound is a magnesium alkoxide and the additive is diethanolamine and claim 19 of the publication discloses an alternating current type plasma display comprising: a back substrate and a front substrate disposed opposite to each other; a gas discharge space sandwiched between the front and back substrates; a pair of electrodes provided on at least one of the substrates and covered with a dielectric layer; and a protective layer provided on the dielectric layer, the protective layer being constituted by a magnesium oxide-containing layer, the magnesium oxide-containing layer having been formed by coating the surface of the dielectric layer with a coating liquid comprising a dispersion of a partial or complete dehydrate of magnesium acetate tetrahydrate as colloidal particles in a medium composed mainly of water and heating the resultant coating and claim 21 of the publication disclose the alternating current type plasma display according to claim 19, wherein the colloidal particles in the coating has a diameter of 3 to 300 nm. The process in the claim 18 above "the protective layer being produced by coating a coating liquid, substantially containing a partial hydrolyzate prepared from a composition comprising an alkaline earth metal compound comprising a magnesium alkoxide and an additive comprising a diethanolamine, on a dielectric layer provided on a substrate and heating the coating" will not be given patentable weight. The process in claim 19 of the instant application "wherein the composition further comprises water in an amount not more than a stoichiometric amount relative to the hydrolysable reaction site of the magnesium alkoxide, and an organic solvent", has not been given patentable weight. The process in claim 20 of the instant application "formed by coating a coating liquid, substantially

Art Unit: 2879

containing a partial hydrolyzate prepared from a composition comprising an alkaline earth metal compound having a hydrolysable reaction site, an additive that can function to dissolve or disperse the alkaline earth metal compound in an organic solvent and to permit the hydrolysis of the alkaline earth metal compound to proceed in a rate-controlling manner, and an organic solvent, on a dielectric layer provided on a substrate and heating the coating, wherein the alkaline earth metal compound is a magnesium alkoxide and the additive is diethanolamine" has not been given patentable weight.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Zimmerman whose telephone number is (571) 272-2466. The examiner can normally be reached on M-W 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2879

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Glenn Zimmerman

  
Vip Patel  
Primary Examiner  
AU 2879